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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER		
ART UNIT		PAPER NUMBER

DATE MAILED: 04/11/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/501,033

Applicant(s)

MESS, LEONARD E

Examiner

VINH P NGUYEN

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2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 14 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim et al. (Pat # 5,530,376).

As to claims 1-9, 17-24, 28-30, 33-35, 37-38, 40-42, 44-47, 49-52, 54-57 and 59-61, Lim et al disclose a carrier for burn-in/testing of non-package die as shown in figure 1, 2 and 4 having an interposer and a resilient connector (1-3, 4, 13) for holding the semiconductor device (6) stationary relative to the interposer. According to Lim et al, the interposer comprises substrate (12) made of ceramic material, a plurality of electrical conductors (16) with receiving ends (17) projected and disposed within a recess of the substrate (12), for connecting to a semiconductor device (6). It would have been obvious for one of ordinary skill in the art to consider that the surface in which the electrical conductors (16) and the receiving ends (17) formed thereon is an outermost surface meanwhile the bottom surface on an opposite side of the substrate (12) is an inner most surface. Furthermore, the materials for the substrate are well known in the art.

As to claims 10-11, 15, 16, 31-32, the material for the connector would have been an obvious design choice as long as it can bias and hold the semiconductor device in place properly.

As to claims 12, it appears that the semiconductor of Lim et al is exposed to the atmosphere to thereby dissipate heat to the atmosphere. As to claim 13, it appears that the connector of Lim et al removably connects the semiconductor device to the interposer. As to claim 14, it appears that the connector of Lim et al is a resilient biasing clip. As to claims 24-25, 36 the materials for the substrate such as "Boron Nitride" or "alumina", etc... would have been well known insulated materials in the art. As to claims 39,43,48,53 and 58, it would have been well known for one of ordinary skill in the art to adhesively connects the semiconductor device to the interposer.

3. Claims 1-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over James (pat # 3,354,394).

As to claims 1-9, 17-24,28-30,33-35,37-38,40-42,44-47,49-52,54-57 and 59-61, James disclose in figures # 1-2 an interposer having an insulated substrate (2) with an outermost surface and being configured for receiving a semiconductor device under test (22), a plurality of conductors (5) with receiving ends formed on the substrate (2) for making contact with the device under test (22) and terminal ends connected to a test apparatus, and connectors (3,6,7) for holding the device under test (22) stationary relative to the interposer. James does not particularly indicate the material for the substrate. However, the selected material for the substrate from a group consisting of insulating ceramic material, inorganic ceramic material, glass, alumina, glass ceramic, nonmetall nitride, aluminum nitride, nonmetallic carbide, alumina

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with silicates, alumina with derivative of silicates, boron nitrides, aluminum nitrides, oxides of Silicon, silicate glass, nucleated substantially crystalline glass and mixtures and derivatives thereof would have been obvious and well known in the art.

As to claims 10-11, 15, 16, 31-32, the material for the connector would have been an obvious design choice as long as it can bias and hold the semiconductor device in place properly. As to claims 12, it appears that the semiconductor of James is exposed to the atmosphere to thereby dissipate heat to the atmosphere. As to claim 13, it appears that the connector of James removably connects the semiconductor device to the interposer. As to claim 14, it appears that the connector of James is a resilient biasing clip. As to claims 24-25, 36 the materials for the substrate such as "Boron Nitride" or "alumina", etc... would have been well known insulated materials in the art. As to claims 39, 43, 48, 53 and 58, it would have been well known for one of ordinary skill in the art to adhesively connect the semiconductor device to the interposer

4. Applicant's arguments with respect to claims 1-61 filed on 02/14/2001 have been considered but are moot in view of the new ground(s) of rejection.


5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE**

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH P. NGUYEN whose telephone number is (703) 305-4914. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4900.


VINH P. NGUYEN
PRIMARY EXAMINER
ART UNIT 2858
04/11/2001